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ABSTRACT

Presented are ways in which consumers can improve the energy efficiency of their homes and conserve water. Organized by types of energy use, the guide points out what to look for and what changes to consider as homeowners inspect heating and air conditioning systems, the hot water system, kitchen appliances, lighting, and water use. Conservation tips and estimated cost reductions are given for each appliance or system discussed. (WB)

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How to save money

by using less
electricity
natural gas
and water

U.S. DEPARTMENT OF HEALTH,
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A DO-IT-YOURSELF GUIDE

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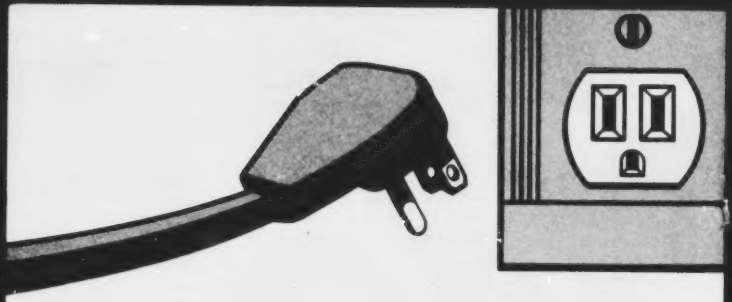

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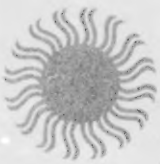


DO-IT-YOURSELF ENERGY CONSERVATION GUIDE

This is a do-it-yourself guide to saving electricity, natural gas, and water.

As a guide, it suggests some ways you can increase the energy-efficiency of your home and conserve water. But once you start thinking about conservation you'll find many other things you can do to save energy, reduce utility bills and, in many instances, make your home more comfortable.

How much will your utility bills go down if you start a conservation program? That depends on many factors, most of which vary from household to household. Although you may see direct dollar savings in those bills, the prices of electricity and natural gas are rising so fast that the bills may remain the same even though you use less energy. (Electricity prices increased 33 percent in the last 6 months and natural gas prices increased 75 percent in the last 2 years.) In either case, however, the savings will be equally real and substantial.

You might want to do a little homework on your past energy and water usage to see how much you have been spending before you begin a conservation program. The "Dollars and Cents" section will show you how to read your utility bills and how to determine the ways in which you use gas and electricity.

A conservation program starts with an inspection of your home. Plan on at least an hour to complete your inspection. The Guide will suggest what you should look for and changes you might consider as you check:

- Heating and air conditioning systems
- Hot water system
- Kitchen appliances
- Lighting
- Water uses

HEATING

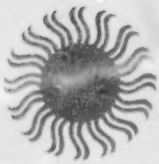
A comparison of your winter and summer utility bills will probably show that most of the energy you use goes into heating your home.

How can you lower the cost of heating your home? There are several ways, and most of them make your home more comfortable while saving money.

The Furnace

Begin by inspecting your furnace. There are many types of furnaces, but most of them are central, gravity-flow, or forced-air furnaces that use natural gas as fuel. These furnaces are usually located within separate enclosures in the house, garage, or even outside. In any event, hot air from the furnace is routed through ducts to the rooms to be heated.

Long, uninsulated stretches of these ducts can reduce furnace efficiency by as much as 25 percent. If the ducts in your home are covered with nothing more



than protective tape, and if the ducts pass through unheated spaces, then insulation is in order. Half-inch fiberglass insulation — easily installed — can be bought for about $10 per 100 square feet. (Ask for furnace duct insulation.)

Are you heating a room that you don't use? If you are, close the furnace duct to the appropriate area. (Controls are usually provided on the ducts just above the furnace.) Closing the duct at the furnace is more efficient than closing the vent in the room.

Caution

Don't close off more than two ducts; to do so makes the furnace operate inefficiently.

And don't forget to close the door to the unheated room; otherwise another duct will have to carry twice as much heat to make up for the closed-off duct. Heating an unused room can cost $10 a month during the winter.

Pilot Lights

While checking your furnace, locate the pilot light. That pilot burns all year, even if you aren't using the furnace. Furnace pilot lights add about $2 to your monthly gas bill; pilot lights on wall furnaces add a little less. If you don't expect to use the furnace during the summer, you can turn off the pilot and save that money.

Caution

It's easy to turn pilot lights off and on, once you know how. But if not done correctly, lighting the pilot light can be dangerous. Read and carefully follow the directions provided on the furnace. If you cannot find them or if you have questions, ask your local utility company for help.

Insulation

Big savings in heating energy can be made by insulating, particularly in the attic. Insulating an attic can reduce heating costs by 25 percent.

Is insulation a good investment? Good insulation (R19 or higher) costs about 25¢ per square foot if you install it yourself, or about 33¢ per square foot if you have someone install it for you. That means it will cost between $200 and $500 to insulate the attic of your home. This may seem like a lot of money, but the money you save on heating alone will pay for it in five winters, or even fewer if the next two or three winters are unusually cold or if you like to keep your home very warm. And remember — insulation increases the value of your house.

Equally important, insulation makes your home more comfortable because it causes heat to be distributed more evenly. Most likely you will discover that, after insulating, your usual thermostat setting will be too high and that you are more comfortable with the thermostat at a lower setting. (This, of course, means extra savings.) In addition, the lower air temperature raises the relative humidity, hence alleviating that "dried-out" sensation you have experienced in heated homes.

Attic insulation makes your house more comfortable during the summer, too. Your house will be cooler because less heat will flow into the house from the attic.

If your house is like most, you can probably install attic insulation yourself. If you are unsure whether your attic can be insulated, or if you don't want to tackle the job yourself, call a contractor for advice.

Floor insulation is not as important as other forms of insulation, but it helps and is a job you can easily do yourself. Carpets also help keep floors comfortably warm.

Thermostat Timer

If your family operates on a fairly regular schedule, you can surely benefit from a thermostat timer. This $25 - $50 device turns the heat on and off at preset times so that you are not paying for heat when you don t need it. If you like — and this will really slash your heating bill — the thermostat timer will also turn the thermostat setting down at night and then turn it up in the morning so that you get up to a warm house. An 8° setback each night during winter will cut your heating bill by about $20 for every $100 you have been paying. (A permanent setback of 2° will cut your bill by about $14 for every $100.)

Other Ways to Cut Heating Costs

A lot of heat is lost through openings around outside doors and windows. The larger openings — those you can see through — can cost you several dollars a month. Most of these losses can be reduced or completely eliminated with a little caulking and weather stripping. Both procedures are simple and inexpensive. Weather stripping and caulking materials can be bought at most hardware stores for 3¢ to 20¢ per foot, depending on the type of materials. A few hours work and about $20 in materials can save you money and make your home more comfortable. And if you have air conditioning, you'll realize additional savings in the summer.

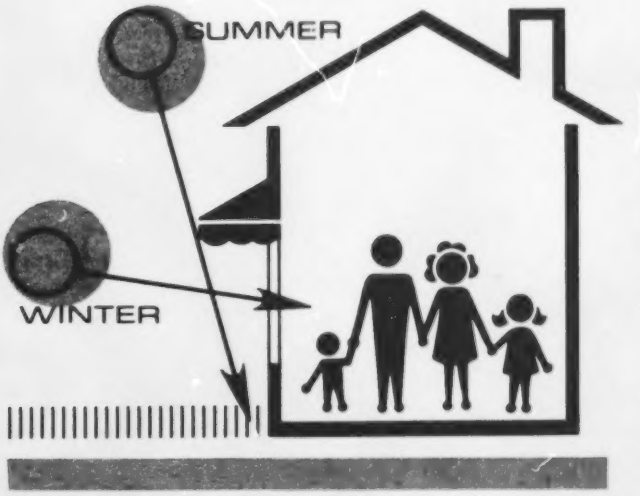
Don't overlook electrical wall outlets — they can let in significant amounts of cold air. These leaks can be stopped by removing the outlet plates and caulking the outlet boxes.

Caution

Turn off the electricity before working on any outlets.

If you have a fireplace, make sure the damper is closed when the fireplace is not in use. If the damper door does not close tightly, seal it with a piece of polyurethane foam. Stopping heat from going up the chimney can save you as much as 25¢ per day during the heating season. Make sure you remove the foam and open the damper before starting a fire.

Double-glazed windows (thermopane) reduce heat loss and make the house feel warmer. A less costly alternative is plastic storm windows made from plastic films such as polyethylene, mylar, or lexan. Heat lost through windows can also be reduced by using draperies, curtains, shades, or shutters. Open the coverings during the day to let the sun in and close them at night to keep the heat in. How much you'll save depends on the materials you use and the total window area in your house.



AIR CONDITIONING

Most of the actions you take to reduce your heating bill will also reduce your air conditioning bill. Insulation, double-glazed windows, draperies, weather stripping, and any other measures you take to stop drafts in the winter will help to reduce the work the air conditioner has to do in the summer.

Because air conditioning is expensive, any reductions in its use can save a lot. If you live in southern California, just insulating your attic (if it is about 1500 square feet) can save between $40 and $100 each year, depending on the temperature at which you keep the house in the summer. If you like an especially warm house in the winter and a cool house in the summer, you should consider both attic and wall insulation.

Make sure your attic is well-ventilated; the cooler it is the less heat will enter your living area. Sometimes an attic fan alone will keep a house surprisingly comfortable at a cost far below that of an air conditioner.

Direct sunlight entering through windows is an important source of heat. A typical unshaded, west-facing window wastes about $40 a year in air conditioning costs because the heat of the afternoon sun directly enters the house. By shading east-facing and west-facing windows, using draperies, external awnings, solar reflecting films, or vegetation, you can reduce cooling bills substantially. For example, a good awning can cut that $40 to $10. Don't use reflecting films on the south side, however, because south-facing windows allow useful heat to pass through in the winter. Alternatively, you can use deciduous vegetation to provide a summer screen.

If you are considering buying new room air conditioners, try to buy the most efficient ones possible. Air conditioner efficiencies are stated in terms of "EER" (energy efficiency ratio). The EER is simply a measure

of how much cooling the air conditioner provides for the energy it consumes. Insist on an air conditioner with an EER greater than 8.0. It may cost a little more, but lower energy costs will make up the difference, often in the first summer. An air conditioning bill of $200 for an air conditioner with an EER of 5 can be reduced to $125 by replacing the air conditioner with one rated EER 8. And you get the same amount of cooling.

There are a number of other ways to cut your electricity costs for air conditioning. Obviously, raising the thermostat setting is one of the easiest and best. Setting the thermostat 2° higher will cut your air conditioning bill by about 7 percent. Inexpensive timers are also available to make sure you don't cool an empty house. And make certain that you are not air conditioning unused rooms or space. Avoid using heat generating appliances—dishwashers, stoves, and washing machines—while using air conditioning; try to use those appliances during the cooler evening hours.

With good insulation and shading, limited use of heat-generating appliances, and a slightly higher thermostat setting you may find that air conditioning is necessary only for a few hours a day, even on the hottest days.

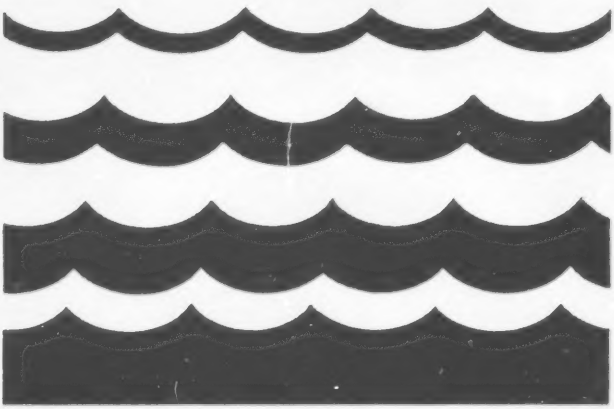
HOT WATER

Next to space heating the largest energy user in your home is the hot water heater. Because of the recent state-wide water shortage you have probably already learned how to reduce your hot water use substantially without much inconvenience or discomfort. You can

see the difference such a reduction in your use of hot water made by comparing your June 1977 gas bill, in therms, with your June 1976 bill.

The place to start in reducing your hot water energy bill is at the water heater. The thermostats on most heaters are set unnecessarily high. Try reducing the setting on your heater by several degrees. Chances are that you will never notice the difference. And lowering the temperature setting just 10° can save you up to $14 year. However, if you find that you are running out of hot water, increase the setting to some intermediate point and try again. Experiment a little until you find the lowest setting that still provides the hot water you need.

Extra insulation jackets can also help to increase heater efficiency. Even though a heater is cool to the touch, it is actually losing heat. Fiber glass insulation jackets can be bought for about $20 at most hardware stores. They can save you about $4 - $6 yearly, a bit less



if you have already set back the temperature. Use any extra insulation to wrap the first few feet of hot water pipes leading from the heater — this can decrease the time it takes for hot water to reach an outlet where it is needed.

After you have done what you can with the hot water heater itself, give some thought to the ways you use hot water. Leaky faucets — an unintentional use — not only waste water but add to your energy bills. Hot water costs about 1/3¢ per gallon.

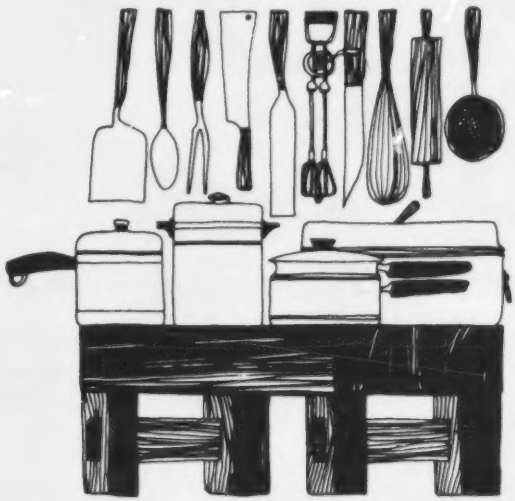
A lot of hot water is used for showers and baths — much of it unnecessarily. A low-flow shower head or a flow restrictor can reduce the cost of the usual 10-minute shower from 10¢ to about 3¢; these savings will quickly repay the cost of the shower head or restrictors. The savings will be especially large for families with children. Buy a good shower head, though, because the poorer ones do not give a satisfactory spray. Another feature you might look for is a shower head with a shut-off valve that allows you to turn the shower on and off as you shower without readjusting the water temperature or pressure.

Faucet aerators cut down the flow of water (by about half) and also make the water stream more pleasant to use. They cost about $1.50 and are easily installed on any faucet with a threaded lip.

You can also save on hot water by washing your clothes with cold water. Modern detergents are just as effective in cold water as in hot water, except for such things as baby clothes and greasy items. Since most washing machines use about 22 gallons of hot water per load, you can save about 5¢ per wash by using cold water. If you wash daily, the savings are from $22 - $33 per year, depending on your washing machine and the temperature of the water you use.

THE KITCHEN

More energy is used in the kitchen than in any other room in the house. Electricity for most household refrigerators costs between $4 and $8 per month. Natural gas costs for kitchen ranges run about $2 per month. Dishwashers use about 15 gallons of hot water per load. Of course, these numbers depend very much on how you use your kitchen and the appliances in it. Here are a few tips for efficient energy and water use in the kitchen.

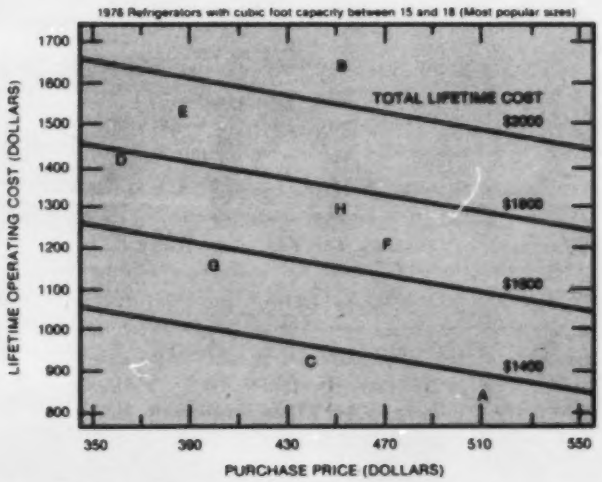


Refrigerators

The refrigerator uses more electricity than anything in the house, probably about 25 percent of the total. The best way to save energy and money is to buy an efficient refrigerator in the first place. When you buy a new refrigerator, ask your dealer to show you

the listing of monthly electricity usage for various brands. A 20 kilowatt-hour per month difference in electricity will save $250 over the life of the refrigerator. It is often worthwhile to spend extra money initially to reduce yearly operating costs.

In the meantime, you can often make your present refrigerator work more efficiently. If you refrigerator has a "Power Miser switch" or similar feature, turn the switch to "low humidity"; in most California climates, this setting will work fine — you will notice absolutely no difference and you can save up to $18 a year. Make sure the coils are clean and free of lint and that there is space for air to pass over them. This can save a few more dollars a year. Move the refrigerator out from the wall a little to give the coils better ventilation. Check the door gaskets; if they are cracked or otherwise not



providing a good seal, replace them. Is your stove next to the refrigerator? If it is, then the oven will be *heating* your refrigerator. Separate the two appliances, if you can, and put a cork or wood barrier between them.

Do you have a second refrigerator? Examine its contents, and ask yourself if it is worth the extra $4-$8 a month in electricity costs.

This scatter plot shows how much it costs to buy and operate some typical household refrigerators. Purchase prices are shown on the bottom scale and total operating costs on the vertical scale. The "total lifetime cost" lines show the purchase price plus operating costs. For convenience, the total cost of a given refrigerator is taken to be that cost shown by the "total lifetime cost" line nearest to the refrigerator in question. For example, the total lifetime cost of refrigerator "D" is about $1800 (its purchase price of about $360 and its lifetime operating cost of about $1440). The point is that purchase price must be seen as only a part of the total cost. For example, refrigerator "A" costs $60 more than refrigerator "B" ($510 vs $450). However, because refrigerator "A" is more efficient that "B," the lifetime cost of "A" is $1400 while that of less efficient "B" is $2000. So although "A" costs more to buy, its total cost is $600 less than that of "B." It can also be seen that a higher purchase price does not necessarily mean greater efficiency. Refrigerator "B" costs more than "C" but "C" is more efficient than "B" ("C" costs about $600 less to own and operate). Note that in all the cases shown here the cost of electricity over the lifetime of the refrigerator is greater than the purchase price. And as the cost of electricity goes up, operating efficiency becomes even more important. In New York City, for example, the $600 saving shown here would be more than doubled.

Ranges

Reducing the energy used by your range is mostly a matter of changing cooking practices. Use the surface units as much as possible, turn the heat down, and cover pots. A pressure cooker uses about half as much energy as does baking or regular cooking. Your local utility may have a pamphlet available that gives energy-saving cooking tips.

If you have a four-burner gas stove but usually use only two of the burners, you can turn off the pilot light for one pair of burners. The savings can be as much as $2 per burner per year. Use a match to light the burners when you need them.

Caution

Do not attempt to turn off the oven pilot light. It is thermostatically controlled.

OTHER APPLIANCES

If you have a dishwasher, you can save some electricity by not using the automatic dry cycle. This eliminates the use of a large electrical heater that accounts for about one-third of the machine's total electrical

power consumption. Most of the time, you don't use the dishes immediately, so you won't even notice the difference. The utility companies would like you to turn on the dishwasher late at night, before you go to bed, to reduce peak-hour power requirements.

Clothes dryers, electric or gas, use a lot of energy. Their use can be substantially reduced simply by hanging the wash outside when weather permits. You can save about 12¢ per load on electricity or 5¢ per load on gas.

Do you have an instant-on television? Instant-on televisions draw current even when they are turned off. Electricity for this convenience on a TV that has a large picture tube costs about $1 per month. A switch can be installed on the card to override this feature or the TV can be disconnected when not in use.

A big electricity user in some homes is the waterbed. If the heater is used, the electricity cost can be as much as $50 per year. By using a thermal pad between the sheets and the bed, you can reduce or eliminate this cost. If you still need the heater, try to insulate underneath the frame and keep your bed covered with heavy blankets.

What about all those small electric gadgets around the home? Don't be too worried—they actually use very little energy.

LIGHTING

After refrigerators, air conditioners and electric stoves, lighting makes up the largest part of most California household electric bills. In general, we use more lights than necessary. You can replace most of the light bulbs in your home with bulbs of lower wattage and still have adequate illumination. In those areas where more light is needed—for sewing or reading—small lamps can be provided. This is called "task lighting." By careful placement of lamps and by using bulbs of lower wattage, you can cut your electricity bill a dollar or two each month.

Another place to conserve electricity is on hall and porch lights; try using 15-watt bulbs.

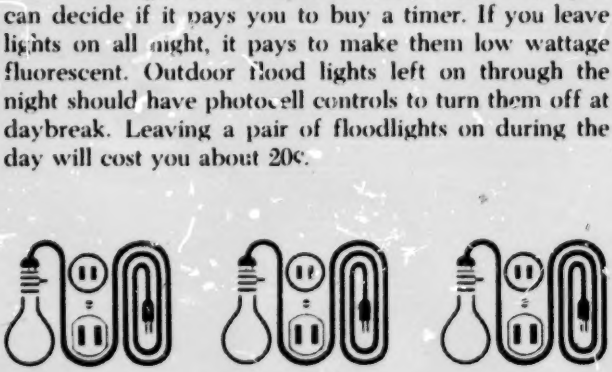
A couple of other tips: higher wattage bulbs are more efficient than low wattage bulbs. You can usually substitute a single 100-watt for four 40-watt bulbs with no loss in the amount of light. Lampshades and light fixtures should be cleaned regularly; a clean fixture can transmit as much as 33 percent more light. If there is repainting to be done, remember that lighter colors can improve the lighting from 10 percent for spotlit areas to 300 percent for areas that rely on indirect light.

Probably your kitchen lights are on more frequently and for longer periods than any other lights in the house. This makes the kitchen — and any other high usage area — a good place to install fluorescent lights. Fluorescents can cut electrical use for lighting by two-thirds while still giving you the same light output. But is fluorescent light unpleasant? Not if you avoid over-lighting and if you buy the right kind of tubes. The "warm white" models provide a pleasant color that is very similar to light from incandescent bulbs; many people prefer this kind of fluorescent light to incandescents. (You can even buy full spectrum fluorescent tubes which are comparable to sunlight, an option not available with incandescents.)

Many manufacturers are now making decorative fluorescent fixtures specifically for home use.

Fluorescents are expensive, but if used to replace lights that are on 4-5 hours a day, they save enough electricity to pay back the additional cost in just a few years; moreover, the tubes last up to 10 times longer than ordinary bulbs. Many hardware stores carry retrofit fluorescents, including the best-known "Killerwatt" fixture, which screws directly into table lamps, and the "Savawatt," a circular fixture that fits overhead sockets. Of course, if you are handy with tools, you can replace the entire fixture with a better rapid-start fluorescent fixture at a somewhat lower cost.

Remember, it pays to turn off incandescent lights even if you plan to be out of a room for only a few moments; however, turn off fluorescents only if you plan to be away for 10 minutes or more. If you have trouble remembering to turn off lights, or like to have lights on during certain periods, you might consider electric timers. The timers, which cost about $15, will turn a light on and then off at preset times. Leaving a 100-watt light on all day will cost you about 5¢; you can decide if it pays you to buy a timer. If you leave lights on all night, it pays to make them low wattage fluorescent. Outdoor flood lights left on through the night should have photocell controls to turn them off at daybreak. Leaving a pair of floodlights on during the day will cost you about 20¢.



WATER CONSERVATION

The latest drought is over but water conservation is always a good practice. As mentioned before, flow restrictors, low-flow shower heads, aerators, and the repairing of leaks will all save water, a good part of which took energy to heat up. But most of the water homeowners pay for is used for flushing toilets and for outdoor watering.

The Toilet

There are several ways you can reduce the volume of water flushed in the toilet. You can bend the float rod down; this will save up to a gallon a flush. Alternatively, you can insert a couple of pebble-filled bottles in the tank. Keep them near the sides so they won't interfere with the flush mechanism. This can save up to a half a gallon per flush. You can also install toilet dams inside the tank and save one to two gallons. If you find that the dams are not allowing enough water for a complete flush, experiment with their position, or just remove them. It's better to flush once with 5 gallons than twice with 4 gallons.

Check for sounds of leaking water in the toilet. A couple of drops of food coloring in the tank will pinpoint most leaks. The most common problem is a plunger that binds and cannot completely seal the toilet tank exit. If you have to replace any parts of the inside flush mechanism, choose the simpler and more foolproof designs now on the market, such as the diapraghm control which replaces the ballcock, and the integrated seal and flapper device which replaces the plunger float.

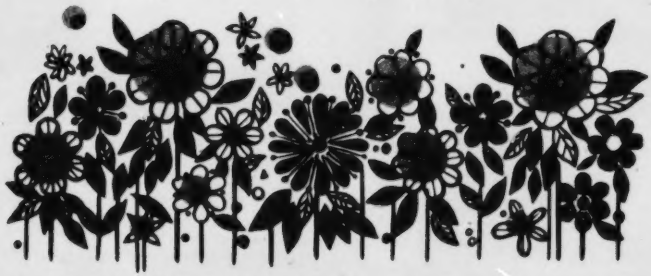
There are many other water conservation techniques; for example, don't flush every time. And when the toilet must be flushed, you can use water that has been saved

from the shower. For health reasons, it is best to pour the water directly into the bowl rather than into the tank. You can avoid odors caused by the shower water by trying a few different toilet deodorants—bleach will work just as well. Water from the last rinse of your washing machine can also be used for flushing the toilet or for watering the plants.

Outdoor Watering

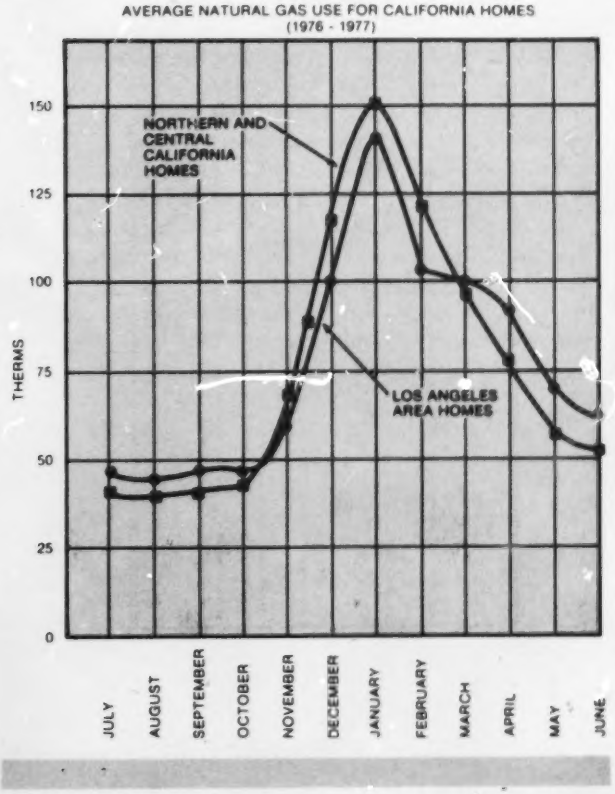
If you have a garden or a yard, here are a few tips for saving water. If you use a sprinkler system, put a timer on it. It will cost about $15 but will save water and prevent inadvertent overwatering of plants. For individual plants, water sparingly, but deeply.

To reduce evaporation, heap mulches around your plants; mulch can be any organic material such as grass clippings, straw, or sawdust. Be sure to check the soil moisture frequently to avoid overwatering. Watering should be done in the mornings or evenings to keep evaporation loss to a minimum.



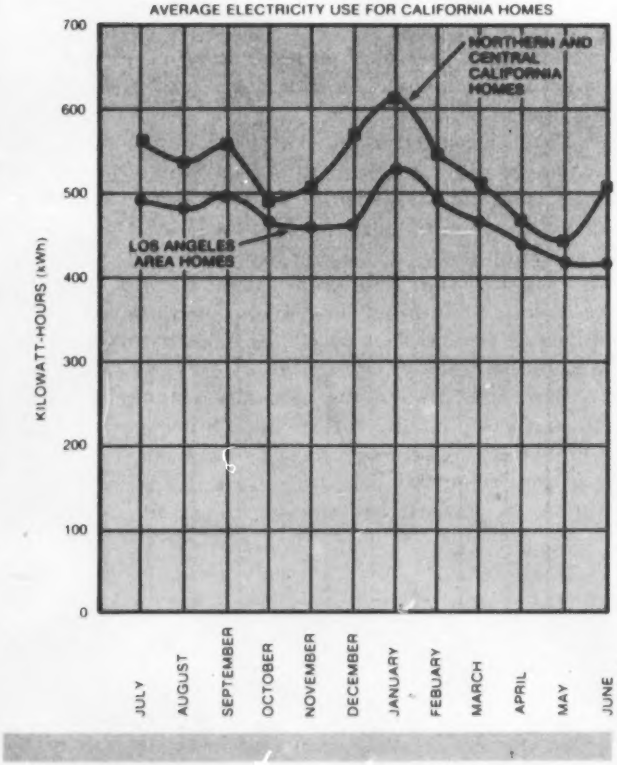
WHAT YOUR UTILITY BILLS TELL YOU

You can use your old utility bills to reconstruct how your household used energy over the past year. If you haven't saved the bills you can get a complete set from your utility company. Ignore the dollar amounts and look at the "therms" and "kilowatt-hours" used; you can also check how much utility rates have increased over



the year. A therm is a measure of natural gas equal to about 10 cubic feet. A typical gas furnace will burn 1 therm in about 1 hour of continuous operation. A kilowatt-hour is a unit of electrical power equal to 1000 watts for 1 hour (or ten 100-watt bulbs lit for 1 hour.)

You can get an overview of how you used natural



gas and electricity by plotting the monthly quanitities on the Average Energy Use graphs. You will probably find that gas use rises steeply during the winter months due to heating. You can estimate the total energy (gas) that was used for heating as follows: Select a summer month you think reflects minimum use of the furnace—a month in which all or most of the natural gas was used for hot water, gas cooking, heating a swimming pool, gas drying, and the furnace pilot light (if you did not turn it off). Multiply the number of therms for that month by 12 and subtract the result from the total therms used during the year. The result should be a close approximation of the amount of natural gas you used to heat your home last year.

Your electricity usage will probably peak twice; once in the summer (air conditioning) and again in the winter (more lights because of shorter days). But you can get more exact figures on your own use of electricity by tracking down all of the kilowatt-hours yourself. It is easiest to start with daily usage. Use the "Energy Use Table" to find out how much energy your major appliances use and then add in the lights by multiplying the bulb wattage by the number of hours you estimate they are used. To see how accurate your estimate is, compare it to the daily average for a low-usage summer month (or the lowest-usage month when no air conditioning is used). You may have to go back and readjust your estimate, particularly for lighting.

TYPICAL APPLIANCE USE OF ELECTRICAL ENERGY

All of us have been asked by the California Public Utilities Commission to cut our use of electricity.

Check your PG&E bill to see how many kilowatthours (KWHR) you are using in a month. Then refer to this list to see how many kilowatthours you can save by eliminating or reducing the use of some of your appliances. (One kilowatt-hour is 1,000 watts of electricity used for one hour, such as ten 100-watt bulbs used for one hour.)

	Estimated Use (KWHR)*
LIGHTING	
General Household	3 Per Day
FOOD	
Broiler	1½ Per Hour
Coffee Maker	¼ Per Brew
Deep Fryer	1 Per Hour
Dishwasher	1 Per Load
Freezer – frostless 15 cu. ft.	5 Per Day
Freezer – 15 cu. ft.	3 Per Day
Frying Pan	½ Per Hour
Range	1 Per Meal
Range – Self-cleaning oven	6 Per Clean
Range – Pre-heating oven	½ Per Bake
Refrigerator – Frostless 12 cu. ft.	3 Per Day
Refrigerator – Frostless 16 cu. ft.	5 Per Day
Refrigerator – Frostless 20 cu. ft.	7 Per Day
Refrigerator – 12 cu. ft.	2 Per Day
Refrigerator – 16 cu. ft.	3 Per Day
Refrigerator – 20 cu. ft.	5 Per Day
Toaster (2 slice)	1/20 Per Use
Toaster – Oven	½ Per Hour
Waffle Iron (3 to 4 servings)	½ Per Use
Waste Disposer	1/100 Per Load
GROOMING	
Hair Dryer	½ Per Hour
LAUNDRY	
Clothes Dryer	3 Per Load
Steam Iron (Hand)	½ Per Hour
Washing Machine	½ Per Load
Water Heater (Quick Recovery)	13 Per Day
COMFORT	
Electric Blanket – King Size	1 Per Night
Electric Blanket – Double or Queen	¾ Per Night
Electric Blanket – Twin	½ Per Night
Portable Heater	1 Per Hour
ENTERTAINMENT	
TV – Color	½ Per Hour
TV – Black & White	¼ Per Hour
TV – Instant-on feature	From 3 to 22 Per Month
Radio-Phonograph (solid state units use less)	1/10 Per Hour
HOUSEWARES	
Floor Polisher	½ Per Hour
Vacuum Cleaner	½ Per Hour

*The estimated usages shown (in KWHR) are based on statistical averages and do not relate to a particular installation or manufacturer's product. If definitive figures are required, contact your appliance dealer or the manufacturer of the specific equipment.

PACIFIC GAS AND ELECTRIC COMPANY
HOME ECONOMICS DEPARTMENT

SOME LAST WORDS

Many of the suggestions we have made can substantially reduce your energy and water costs in an immediate and obvious way. But the significance of some of the suggestions will be more apparent if they are considered collectively as an energy savings "package." And remember that energy costs are rising — the dollar value of many of your savings could double in 5 years. Even now, New Yorkers are paying twice as much for electricity as we do in California.

And keep in mind that tax credits are or will be available for the money you spend on insulation and solar heating installations.